

### **ABSTRACT**

A code group out of 32 code groups that a time division duplex (TDD) base station belongs to is to be indicated. A primary synchronization code is transmitted along with a plurality of secondary synchronization codes from the TDD base station. The plurality of secondary synchronization codes are derived from a row of a Hadamard matrix and the secondary synchronization codes are quadrature phase shift keying modulated. The code group of the TDD base station is indicated by the transmitted plurality of secondary synchronization codes and the 32 code groups are divided into a plurality of code group sets. Each of the code group sets is identified by using a different set of secondary synchronization codes.